Semantic Sensor Web Enablement for COAST, Phase I

Completed Technology Project (2010 - 2010)

Project Introduction

Sensor Web Enablement (SWE) is an Open Geospatial Consortium (OGC) standard Service Oriented Architecture (SOA) that facilitates discovery and integration of web-enabled sensor data. We propose two enhancements to SWE. One is the creation of Semantic Sensor Web Enablement (SSWE) through the annotation of SWE services and schema using ontologies. This will allow the utilization of the SWE services using semantic queries and concepts as opposed to purely syntactic ones. An integrated sensor ontology would also help fuse data from heterogeneous sensors and associated SWE services. The second enhancement is the use of intelligent software agents to help automate the extraction and handling of relevant data from the SSWE. Together, these two enhancements will make it easier for geospatial browsers like COAST to discover and utilize web-enabled sensor data. We provide two methods by which COAST users can benefit from SSWE. One is through one or more WMS servers which will mash the data through SSWE and provide a regular WMS interface to COAST; in this method, no change will be needed in the existing COAST user-interface. The second method will be a COAST plug-in which provides a means for users (aided by intelligent agents) to directly query the SSWE services through semantic search for web-enabled sensor data.

Primary U.S. Work Locations and Key Partners

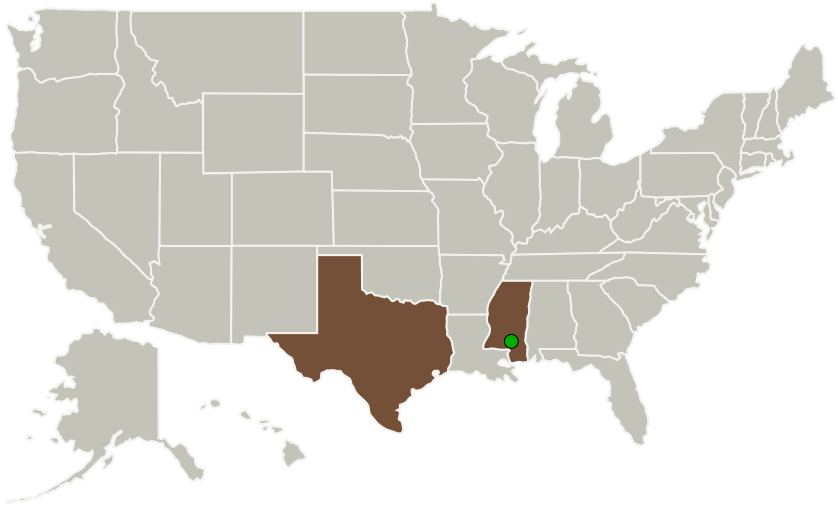

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Table of Contents

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
Vcrsoft, LLC	Lead Organization	Industry Minority-Owned Business	Arlington, Texas
Stennis Space Center(SSC)	Supporting Organization	NASA Center	Stennis Space Center, Mississippi

Primary U.S. Work Locations	
Mississippi	Texas

Project Transitions

January 2010: Project Start

July 2010: Closed out

Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/139437)*

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Vcrsoft, LLC

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

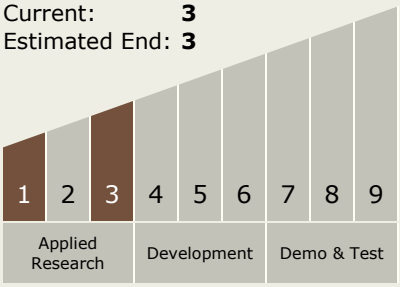
Carlos Torrez

Principal Investigator:

Vc Ramesh

Technology Maturity (TRL)

Start: **1**
Current: **3**
Estimated End: **3**



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Technology Areas

Primary:

- TX11 Software, Modeling, Simulation, and Information Processing
  - TX11.6 Ground Computing
    - TX11.6.5 Public Cloud Supercomputer

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System